

The drawings stand objected to because, for Figure 6, it is considered to be counterintuitive for one to be able to view the components 120 and 121 from the top as stated at page 4, line 18. Applicant has amended the specification as indicated to clarify that Figure 6 is a bottom view of the intentional radiator module or a top view of the PCB layer 126.

In the Office Action, it is stated that claims 4 and 7 will be objected to as being substantial duplicates of claims 1 and 2 should claims 1 and 2 be found allowable. Applicant respectfully traverses this objection.

Claims 1 and 2 cover an intentional radiator module and an intentional radiator module that further includes a shielding connection, respectively. In contrast, claim 4 covers an intentional radiator and shielding coupled to the ground plane of the intentional radiator. Claim 7 further includes a shielding connection. Because shielding is an element in claims 4 and 7 and not in claims 1 and 2, claims 4 and 7 cannot properly be considered to be substantial duplicates of claims 1 and 2.

Based on the foregoing, applicant respectfully requests withdrawal of the objections to the drawings and the claims.

Claims 1-5 and 7 stand rejected under 35 U.S.C. § 103(a) as being considered unpatentable over U.S. Patent No. 5,847,682 to Ke ("Ke").

Claim 1 includes the limitations:

an intentional radiator including an antenna and a ground plane, the ground plane to be coupled to shielding that includes an opening for the antenna, the intentional radiator to be positioned such that the antenna radiates through the opening and the ground plane at least partially blocks emissions through the opening.

(Claim 1)(emphasis added).

Applicant respectfully submits that Ke does not teach or suggest positioning an intentional radiator such that a ground plane of the intentional radiator at least partially blocks emissions through an opening in shielding.

Ke discloses a top loaded triangular printed antenna. In accordance with Ke, an antenna structure is mounted on a printed circuit board that includes a grounding surface and grounded strips that are connected to the grounding surface using vias. (Ke, col. 4, lines 23-52)

As shown in Figures 6A-6D of Ke, the antenna structure may be partially encased in first and second electromagnetic shielding covers. (Ke, col. 5, lines 1-4). A rectangular hole in the first shielding cover is provided such that part of the antenna on the antenna structure is outside the shielding covers while the remainder of the antenna extends through the hole inside the shielding covers.

The grounding surface of Ke is not positioned such that it at least partially blocks emissions through an opening in shielding. The rectangular opening of Ke is in contact with a first layer of the antenna structure. The grounding surface of Ke is on another layer of the antenna structure that does not come in contact with, or have any effect on the opening in the antenna structure. For at least this reason, Ke cannot be considered to teach the claimed features of applicant's invention.

Ke also does not suggest such features. The grounding surface of Ke is normal to a plane of the opening in the shielding covers. There is no teaching or

suggestion of positioning the antenna structure of Ke such that the ground plane provides any blockage of emissions through the rectangular opening of Ke.

For at least the foregoing reasons, claim 1 is patentably distinguished over the Ke reference.

Independent claims 4, 9, 14 and 18 each include a limitation similar to that discussed above with reference to claim 1. Claims 2-3, claims 5-8, claims 10-13, claims 15-17 and claims 19-20 depend from and further limit claims 1, 4, 9, 14, and 18, respectively. Thus, claims 2-20 are also patentably distinguished over the Ke reference for similar reasons.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being considered unpatentable over Ke as applied to claim 1 above, and further in view of U.S. Patent No. 5,892,481 to Andersson ("Andersson").

As mentioned, claim 6 depends from and further limits claim 4, which includes a limitation similar to that argued above in reference to claim 1. Thus, claim 6 is patentably distinguished over the Ke reference.

The addition of Andersson does not remedy the deficiencies of the Ke reference.

Andersson discloses a device for antenna units that consists of one or more radiation elements and a ground plane arranged at a distance from the radiation elements. Several cooling flanges are included which present edge portions facing the radiation elements and are arranged together to define the ground plane. A surrounding radome may be provided to protect the antenna units. (Andersson, Abstract, and e.g. col. 2, lines 27-32)

Andersson does not teach or suggest positioning an intentional radiator such that a ground plane on the intentional radiator at least partially blocks emissions through an opening in shielding.

For at least the foregoing reasons, claim 6 is patentably distinguished over the Ke reference, alone or in combination with Andersson.

Claims 8 and 18-20 stand rejected under 35 U.S.C. § 103(a) as being considered unpatentable over Ke as applied to claim 1 above, and further in view of U.S. Patent No. 5,523,768 to Hemmie et al. ("Hemmie").

As mentioned above, claim 8 depends from and further limits claim 4 which includes a limitation similar to that argued above in reference to claim 1. Claim 18 also includes a limitation similar to that argued above in reference to claim 1 and claims 19-20 depend from and further limit claim 18. Thus, for the reasons discussed above, claims 8 and 18-20 are patentably distinguished over the Ke reference.

The addition of the Hemmie reference to Ke also does not teach or suggest the claimed features of applicant's invention.

Hemmie discloses an integrated feed and down converter apparatus. The down converter apparatus of Hemmie comprises a first printed circuit board that includes top and bottom ground planes and an RF filter located at an input end of the printed circuit board. The RF filter is surrounded by an input ground shield that is soldered to the top and bottom ground planes of the printed circuit board. (Hemmie, Abstract).

While the input ground shield of Hemmie includes opposing arcuate cutouts, the ground planes of Hemmie are normal to the openings in the cutouts such that the ground planes play no part in blocking or partially blocking emissions through the opening.

Thus, the combination of Hemmie and Ke would still fail to lead one of ordinary skill in the art to arrive at the claimed features of applicant's invention. For this reason, applicant respectfully submits that the claims are also patentably distinguished over the Ke and Hemmie references, alone or in combination.

Claims 9-17 stand rejected under 35 U.S.C. § 103(a) as being considered unpatentable over Hemmie.

Claims 9 and 14 include a limitation similar to that discussed above in reference to claims 1, 4 and 18. Claims 10-13 and claims 15-17 depend from and further limit claims 9 and 14, respectively. Thus, for the same reasons that claims 8 and 18-20 are patentably distinguished over the Hemmie reference, claims 9-17 are also patentably distinguished over the Hemmie reference.

Applicant respectfully submits that the applicable objections and rejections have been overcome and claims 1-20 are in condition for allowance. If the examiner disagrees or believes that further discussion will expedite prosecution of this case, he is invited to telephone applicant's representative at the number indicated below.

If there are any charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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**VERSION OF REPLACEMENT PARAGRAPHS WITH MARKINGS TO SHOW**  
**CHANGES**

The paragraph that begins at page 4, line 18:

**Figure 6** is a [top] bottom view of the intentional radiator of Figure 5.

The paragraph that begins at page 11, line 7:

**Figure 6** is an overhead view of the P.C. board layer 126 (i.e. a bottom view of the intentional radiator module 515) with one possible pattern for the vias 525. It will be appreciated that the vias 525 may be provided in any pattern to coupled the ground plane 135 to the shielding 110.

## **VERSION OF AMENDED CLAIMS WITH MARKINGS TO SHOW CHANGES**

1. (Amended) An apparatus comprising:

an intentional radiator including an antenna and a ground plane, the ground plane to be coupled to shielding that includes an opening for the antenna, the intentional radiator to be positioned such that the antenna radiates through the opening and the [shielding and the] ground plane [reduce] at least partially blocks emissions through the opening.

4. (Amended) An apparatus comprising:

an intentional radiator including an antenna and a ground plane; and shielding including an opening, the antenna to radiate through the opening, the shielding being coupled to the ground plane, the ground plane being oriented to [reduce] at least partially block emissions through the opening.

9. (Amended) A system comprising:

a device to be shielded;  
an intentional radiator including an antenna and a ground plane;  
shielding enclosing the device to be shielded except for an opening proximate to the antenna, the shielding being coupled to the ground plane, the ground plane being oriented to [reduce] at least partially block emissions through the opening by the device to be shielded.



14. (Amended) A method for integrating an intentional radiator in a system, the method comprising:

coupling a ground plane of an intentional radiator to system shielding that includes an opening for an antenna coupled to the intentional radiator; and  
orienting the ground plane such that the ground plane at least partially  
blocks emissions through the opening.

18. (Amended) An apparatus comprising:

a means for shielding including an opening for an antenna; and  
a means for coupling the shielding to a ground plane of an intentional radiator including the antenna, the ground plane [and the means for coupling to reduce] being oriented to at least partially block emissions through the opening.